



King's Research Portal

DOI:

[10.1016/j.midw.2019.02.007](https://doi.org/10.1016/j.midw.2019.02.007)

Document Version

Peer reviewed version

[Link to publication record in King's Research Portal](#)

Citation for published version (APA):

Oates, J., Topping, A., Arias, T., Charles, P., Hunter, C., & Watts, K. (2019). The mental health and wellbeing of midwifery students: An integrative review. *MIDWIFERY*, 72, 80-89. <https://doi.org/10.1016/j.midw.2019.02.007>

Citing this paper

Please note that where the full-text provided on King's Research Portal is the Author Accepted Manuscript or Post-Print version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version for pagination, volume/issue, and date of publication details. And where the final published version is provided on the Research Portal, if citing you are again advised to check the publisher's website for any subsequent corrections.

General rights

Copyright and moral rights for the publications made accessible in the Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognize and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the Research Portal

Take down policy

If you believe that this document breaches copyright please contact librarypure@kcl.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.

Title

The mental health and wellbeing of midwifery students: An integrative review.

Authors

Jennifer Oates*, Lecturer^a,

Alice Topping, Research Assistant^a,

Teresa Arias, Senior Teaching Fellow^b,

Penny Charles, Lecturer^b,

Caroline Hunter, Senior Teaching Fellow^b,

Kim Watts, Senior Lecturer^b,

^aDepartment of Mental Health Nursing, Florence Nightingale Faculty of Nursing, Midwifery and Palliative Care, King's College London, London, UK.

^bDepartment of Midwifery, Florence Nightingale Faculty of Nursing, Midwifery and Palliative Care, King's College London, London, UK.

Corresponding author:

*Corresponding author at: Florence Nightingale Faculty of Nursing, Midwifery and Palliative Care, King's College London, James Clark Maxwell Building, 57 Waterloo Road, London, SE18WA.

E-mail address: jennifer.oates@kcl.ac.uk (J.Oates). Telephone: +44 (0)20 7848 4698

Corresponding author ORCID: <https://orcid.org/0000-0001-7745-9539>

Acknowledgements

None

Tables:

Conflict of Interest

None

Ethical approval

The wider study of which this is part has been approved by the authors' university ethics committee.

Funding Sources

None

Acknowledgements

None

Declarations of Interest

None

Abstract

Background: The mental wellbeing of healthcare professionals affects the quality of care they provide. Student midwives are entering a profession characterised by exposure to trauma and stress. As concern about the mental health of students grows, it is important to establish what is known about the state of midwifery student wellbeing and identify effective ways to improve it.

Objectives: to summarise current research on the state of midwifery student wellbeing with the aim of identifying and informing interventions to address their mental health.

Design: the review examined 24 papers describing 22 studies, accessed via nine databases.

Methods: an integrative review, including an appraisal of study quality as well as a narrative account of findings.

Findings: studies were disparate in methodologies, theoretical frameworks and measures used, however, there were common findings: midwifery training is inherently stressful, emotionally taxing and potentially traumatic. Students report that interpersonal conflict and lack of support from qualified staff in the clinical area adversely affected their wellbeing.

Limitations: the pool of studies in this area was limited and the heterogenous nature of studies precluded aggregation of findings.

Conclusions and implications of key findings: Future research on midwifery student wellbeing should include longitudinal and comparative aspects. Interventions to enhance midwifery student's mental health will need to draw on research from other healthcare student groups due to the paucity of specific evidence from midwifery students themselves.

232 words

Keywords

midwifery; students; wellbeing; resilience; mental health; stress

Introduction

This integrative review summarises current research on the state of midwifery student wellbeing with the aim of informing interventions to address their mental health. The wellbeing of the healthcare workforce affects the wellbeing of those in their care (Boorman et al, 2008; Keogh, 2003). A recent review of evidence from 134 NHS acute care trusts in England by the King's Fund and the Picker Institute found that staff health and wellbeing

impacts on care through sickness absence, low staffing numbers and use of temporary staff. This is associated with reduced continuity of care and expressed satisfaction with care (Sizmur and Raleigh, 2018). Recent studies have identified that midwives experience high levels of occupational stress (Pezaro et al, 2016; 2017; Kenworthy and Kirkham, 2011) and the midwife's working environment is characterised by high emotional demand (Hunter, 2004; 2005) with frequent risk of exposure to trauma (Leinweber and Rowe, 2010). The 2016 NHS staff survey showed that 46% of midwives had experienced work related stress, which was higher than both paramedics and health visitors (Royal College of Midwives, 2017). A survey commissioned by the Royal College of Midwives found that 83% of midwives reported burnout, 33% reporting anxiety and 38% reporting depression (Hunter et al, 2018). Parallel to increasing concern about the mental wellbeing of all healthcare workers, international reports highlight the rise in poor student mental health (Storrie et al, 2010). This is evidenced by the increasing demands placed on university student counselling and support services (Thorley, 2017). Deasy et al's (2015, 2016) study of healthcare students in Ireland found that 42% reported symptoms of psychological distress, associated with academic, financial and psychosocial factors.

Recent literature reviews in midwifery, by McCarthy et al (2018) and Pezaro et al (2016; 2017) have situated the understanding of midwifery student wellbeing in the context of wellbeing of **healthcare** students and wellbeing of midwives. Pezaro et al (2016, 2017) reviewed studies of midwives, including midwifery students. McCarthy et al (2018) aggregated studies on nursing and midwifery students. McCarthy et al's (2018) integrative review of 25 studies on sources of stress and ways of coping in midwifery and nursing students differentiated between stress caused by the clinical environment and stress caused by the academic component of their programme. Clinical stress was either due to students' low confidence to undertake care and fear of making mistakes, or stress caused by their relationships with clinical educators and colleagues. Pezaro et al's (2016) narrative review on work-related psychological distress in midwifery populations included 30 papers. Their focus was on those aspects of the midwifery role that are associated with psychological distress, defining it as maladaptive psychosocial functioning as a response to exposure to acute or prolonged stress. Pezaro et al (2016) differentiated between occupational and organisational sources of stress. They determined that midwives are at risk of secondary traumatic stress because of their exposure to traumatic events, for example neonatal death. This may lead to fear, anxiety and symptoms of post-traumatic stress disorder and burnout. It is most likely in resource-poor environments or when

midwives work with families with complex social needs. Pezaro et al (2016) defined midwifery as ethically complex and emotionally demanding, potentially leading to compassion fatigue. They argued that student midwives are at particular risk of occupational stress compounded by feeling disempowered to speak out in the midwifery workplace. Organisational sources of stress corresponds to the culture of midwifery, which has been described as hierarchical and dysfunctional (Sheen et al, 2014). According to Pezaro et al (2016) the 'emotion work' of midwifery is not solely that associated with the occupational role of 'being with' women, it is the negotiation of working relationships both between midwives and between midwives and medics **in the context of a hierarchical and obstructive organisational culture.**

McCarthy et al's (2018) review summarised how nursing and midwifery students cope with stress. A range of behaviours were reported, from problem solving, to avoidance, and seeking social support. They identified seven studies reporting interventions to aid coping with stress. There were significant reductions in stress following the introduction of a mindfulness programme, a health promotion programme, a spiritual learning programme and a hardiness education programme. Participants in a peer mentoring programme and a Rational Emotive Behaviour therapy intervention showed no improvement in stress scores when compared with controls. None of the intervention studies reported in the review included midwifery students. Pezaro et al's (2017) systematic review of interventions to address psychological stress in midwives and student midwives included six studies, none of which focused solely on midwifery students. Three studies offered mindfulness training, one of which included stress management (van der Riet et al, 2015), two papers described a work based resilience workshop and mentoring programme (McDonald et al, 2012, 2013), and one study evaluated a programme of clinical supervision (Wallbank, 2010). Pezaro et al (2017) concluded that whilst the studies reported some positive short term effects on stress, self-care, general health and confidence, there was not sufficient evidence to undertake meta analyses or make definitive recommendations. Within the reviewed literature no intervention studies solely focusing on midwives or student midwives were identified. Of the studies reviewed, only Warriner et al (2016) and van der Riet et al (2015) included student midwives.

This review was undertaken against this background of growing evidence of poor mental health and reduced wellbeing in students and qualified midwives. 'Mental health' 'mental illness', 'psychological distress' and 'wellbeing' are terms that may be used to describe a

range of experiences, from happiness to severe depression, from work-related burnout to diagnosed mental disorders. This review included studies addressing the spectrum of 'psychological distress', 'mental health and wellbeing.' The review is timely because it draws together the findings of disparate studies to capture a full sense of midwifery students' mental health and wellbeing and identify further research priorities. This review aims to inform the design and delivery of future interventions to improve midwifery students' mental health and wellbeing by addressing the following review questions:

1. What is the state of midwifery student mental health and wellbeing?
2. What factors are associated with or affect midwifery student wellbeing?
3. What interventions improve midwifery student wellbeing?

Methods

An integrative review methodology was used, as described by Whitemore and Knapfl (2005). This approach allows for the inclusion of research using a variety of methodologies. The review model has five stages: problem identification; literature search; data evaluation, data analysis and presentation. In the **problem identification** stage the research team identified midwifery student wellbeing, mental health and associated terms to be of interest. The primary impetus was a growing sense from the research team's contact with midwifery students that their mental wellbeing was far from optimum. One aspect of the review was to test the extent to which this assumption was borne out by empirical evidence. A PICO framework was used to define search parameters in the **literature search stage**. The Population was preregistration student midwives, the Interventions (if there was one) were ones that addressed mental ill health or stress, Comparator (none), Outcome (change in wellbeing or mental health). The following databases were searched: Pubmed, Scopus, Cinahl, Medline, Maternity and infant care, Psych info, British Nursing Index, Applied Social Sciences Index and Abstracts, Web of Science. On the initial search the following terms were used: midwi* AND student* AND wellbeing, well-being, well being, happy, happiness, stress*, self efficacy, self-efficay, resilien*, mental health, coping, self care, self-care, anxi*, depress*, burnout, burn out, burn-out, self esteem, self-esteem. Titles and **abstracts** were searched in all databases apart from Web of Science. In Web of Science title and topic was searched as there was no option to search abstracts. On reviewing papers for inclusion we identified another possible search term: 'emotion', whereby a number of studies explored the emotional labour of midwifery that might pertain to mental distress. The data bases were searched

again using 'emotion' AND midwi* AND student*. The search process is described in Figure 1.

Inclusion criteria were: **full text availability**, any year, empirical research using any study design, any country but text available in English, focused on the wellbeing of midwifery students. Exclusion criteria: not available in English, not empirical research, not focused on wellbeing or mental health, data analysis did not provide information about midwifery students distinct from other participants.

In the **data evaluation** stage the quality of studies was reviewed and agreed by two researchers, using the Mixed Methods Appraisal Tool (MMAT), (Hong et al, 2018; Pluye et al, 2011). The MMAT allows researchers to evaluate validity and reliability of quantitative and qualitative study designs. It has been previously used in integrative and systematic reviews (Delgado et al, 2017; Pezaro et al, 2017) and found to be robust. All studies met at least 2 of the five quality criteria for individual methodologies. Twelve studies met all five criteria. Total scores are included in Table 1, with scores ranging from * if 1 criterion met to ***** if all five criterion were met. In the **data analysis** stage, information from the included studies was tabulated (see Table 1) and findings summarised according to which review question they answered. With such a diverse set of studies, with very little repetition of research question, research methods or measures it was not feasible to combine data. Data were tabulated and compared with common themes identified. Plausibility of analysis was discussed by the research team, comprising researchers with midwifery and mental health nursing backgrounds. Findings are presented here first as a summary of study characteristics, and second in relation to the review questions.

Findings

In total 99 papers were identified from the searches and reviewed in full by two researchers. The search outcome is presented in Flowchart 1.

24 papers were included in the final review, describing 22 studies (Cavanagh's two 1997 papers described the same study, as did Davies and Coldridge's 2015 and 2017 papers).

Types of study

Study characteristics are summarised in Table 1. Of the nine qualitative studies, two used ethnographic methodologies (Chamberlain, 1997; Hunter, 2005); two (Alghamdi and

Jarrett, 2016; Bradshaw et al, 2018) used focus groups; one used focus groups alongside a survey with open questions (Sidebotham et al, 2015); four used semi structured interviews (Ahmadi et al, 2017, Coldridge and Davies, 2017; Davies and Coldridge, 2015; McKenna and Rolls, 2011). Five papers described mixed methods studies (Bass et al, 2016; Cavanaugh and Snape, 1997a; 1997b; Cummins et al, 2018; Williams, 2016). Of the 10 quantitative papers, nine described cross sectional surveys and one (Sahebalzamani, 2014) was an experimental case-control study, reporting on the effect of an intervention.

Quality appraisal

Study limitations and MMAT quality scores are reported in Table 1. Common limitations were: **study** sizes were small, single site, used convenience sampling, with limited discussion of sampling frame and the potential impact for non-response bias. All the qualitative studies scored highly on the MMAT, demonstrating appropriate methodology and reporting of findings. Sahebalzamani's (2014) experimental study lacked a control group and provided limited assurance regarding sample selection and representativeness. Studies with high dropout rates (Bass et al, 2016; Cummins et al, 2018) did not discuss the characteristics of dropouts sufficiently. Not all of the cross-sectional surveys used validated measures for stress, for example Cilingir et al (2011). Some authors (Pryjmachuk et al, 2008; Larijani et al, 2010) reflected that self-report measures, even if validated, may not accurately reflect objective appraisals of stress or mental distress.

What is the state of midwifery student mental health and wellbeing?

Six cross-sectional studies offered insight into the 'the state of midwifery student wellbeing', although there was no similarity in the measures used, meaning no comparison or aggregation of findings could be made. Beaumont et al (2016) used the short-Warwick Edinburgh Mental Wellbeing Scale (sWEMWBS) (Tennant et al, 2009) and the Professional-Quality-of-Life (ProQOL) scale (Stamm et al, 2009), reporting student midwives' (**n=103**) scores to be on a par with the general adult population, with 'higher than average' scores on the burnout subscale of the PrQoL. Correlations were found between higher self-compassion and wellbeing scores and reporting less compassion fatigue and burnout. Ferrand et al (2017) used French-language versions of the World Health Organisation Quality of Life measure (WHOQoL-Bref) (Leplege et al, 2000) and the General Health questionnaire (GHQ 12) (Lesage et al, 2011) to measure the mental health of student midwives from three French schools (n 214), alongside measures of psychological need, satisfaction, motivation and job demand, support and control. The

authors found that work control and social support were protective factors for satisfaction of psychological needs and that good mental health (using the GHQ and WHOQoL) was associated with having competence needs met and having high motivation. Inanc (2017) used the Beck Depression Inventory (BDI) (1961) and the Beck Anxiety Inventory (BAI) (1988) with 203 Turkish midwifery students, measuring correlations with a Childhood Trauma Inventory (CTQ) (Bernstein et al, 1994). Mean scores on the BAI and BDI were within the 'normal' range for these scales. Higher scores on the CTQ were associated with higher anxiety and depression scores. Larijani et al's (2010) study found a relationship between assertiveness and anxiety in nursing and midwifery students in Iran. Of the 77 midwifery students surveyed, 35.1% (n=27) had moderate and 1.3% (n=1) had high anxiety scores. There was also a significant inverse relationship between students' anxiety scores and scores on an assertiveness scale. Like Ferrand et al (2017), Mivsek et al (2018) used a measure of wellbeing informed by the Karacek and Theorell's (1990) Job Demand- Control- Support Model,(Tuomi et al, 2016) to determine midwifery students' wellbeing in Slovenia. The findings showed a mixed picture, with one quarter of participants saying they found the course 'too demanding' and one in five students found the course very stressful. Prymachuk et al (2008) used the GHQ-12 (Goldberg et al, 1988) as a measure of psychological distress with 120 midwifery students, in the context of a study of stress in nurses and midwives in one UK university. They found GHQ 'caseness' (read evidence of psychological distress) to be 45.1% in this population. They found that predictors of psychological distress were: higher self-reported stress levels,, use of task-oriented coping, being a smoker and studying on a 'standard' versus an 'enhanced' diploma programme (with the 'enhanced' programme having higher entry requirements and including a route into degree-level study at a later date).

In summary, concepts of mental health and mental wellbeing have not been well defined or explored in midwifery students. There is some evidence from single site studies that midwifery students' mental health may be similar or slightly worse than the general population and that aspects of mental ill health, such as symptoms of depression and anxiety correlate with self-reported stress, trauma in earlier life, lower assertiveness and having fewer psychological needs being met. Cultural and national policy-based influences on outcomes have not been explored as there are no international comparator studies and no similar enough studies to aggregate findings.

What are the causes and consequences of mental distress in midwifery students?

Whilst there are few studies using validated measures of mental health, wellbeing and associated concepts such as perceived stress, trauma, burnout, anxiety, these terms are used throughout the qualitative literature. Researchers have allowed participants to define their experiences in terms of 'stress', 'trauma' and 'resilience' in their own way. Davies and Coldridge (2015) justify this approach, in their case to 'trauma', by explaining that by not setting criteria for a definition of trauma used by participants, they were avoiding prejudging what students might find traumatic.

There were four qualitative studies that identified aspects of the midwifery course that may cause student anxiety, stress and fear. For Ahmadi et al's (2017) Iranian midwifery students there were three main concerns: fear of doing harm, fear of encountering their first childbirth and fear of the possible penalties for their professional errors and negligence. These concerns were associated with physiological symptoms of anxiety and lost sleep, as a consequence of 'stress'. This could lead to students dropping out of the course. Khajeheh et al (2004) surveyed junior and senior Iranian students. They found that most participants reported experiencing 'stress', with over 25% describing physiological features of a stress response. For them, the relationship with the mentor was the main source of stress, followed by clinical tasks with a fear of errors and malpractice, and thirdly, intrapersonal factors, such as worries about relationships and health problems outside their midwifery course. Khajeheh et al (2004) disqualified any potential participants who had depression or met GHQ threshold criteria for mental distress. This meant that their findings did not include (potentially useful) information about sources of stress for the student with greatest need of assistance.

Cavanagh and Snape (1997a, 1997b) used a qualitative survey to identify the 'sources of stress' for preregistration students. The situations causing 'very much' stress were having critical and unsupportive tutors and working with unsupportive doctors and midwives. Cavanagh and Snape report the emotional consequences of 'stress' as lack of confidence, low self esteem, shame, disgust, helplessness and annoyance. In some cases participants said that 'stress' had led to weight loss, lack of sleep and panic attacks. Cilingir et al (2011) used a qualitative survey to determine what expectations students had of the educational aspect of their course and what 'stressors' they encountered. Their study included nursing and midwifery students, but data was disaggregated in their report. Both sets of students experienced 'stress' from their educators' questions, fear of failure and making mistakes and from the presence of their educators when doing their clinical work,

but midwifery students reportedly found the first two stressors more so than nursing students.

Some studies examined the impact on students' wellbeing of specific experiences during the course, for example Alghamdi and Jarret's (2016) exploration of the different ways students coped with the experience of perinatal loss. This ranged from having a work/life boundary, either keeping busy or becoming inactive and 'focusing on routine care'. The latter is a coping strategy also reported by Chamberlain (1997) and Davies and Atkinson, (1997) where students under stress reverted to routine 'nursing' tasks such as 'doing the obs' when struggling to cope in the midwifery setting. McKenna and Rolls (2014) interviewed 8 undergraduates about their experience of stillbirth and neonatal death. These experiences altered students' perception of midwifery, which was initially seen to be about 'new life' rather than death. Bradshaw et al (2018) used focus groups to explore students' experiences of a final year internship. They defined this experience as one of 'considerable stress' caused by competing deadlines, increasingly complex clinical work and a struggle to have a work/life balance. The wellbeing of students was affected by interpersonal relationships, particularly with qualified midwives. As found in Hunter's (2005) study, being able to develop positive relationships with other midwives was key to student success. Students had to find ways to 'fit in' to clinical environments.

Coldridge and Davies (2017) and Davies and Coldridge, (2015) explored students' perceptions of 'trauma' and support for trauma. In their study, encountering 'trauma' was an inevitable aspect of midwifery work. One aspect was the psychological demand of 'being with' a woman in childbirth, but the five thematic aspects of trauma they identified were more associated with professional aspects of the role, for example students' distress at joining a health system under strain where women get less than ideal care. Coldridge and Davies describe how students could integrate their experience of traumatic events, such as medical emergencies by 'learning to cope' in numerous forms, from unhealthy smoking, eating and drinking, to sharing experiences with family, friends and fellow students or using mindfulness. Trauma and challenge could be an opportunity for growth and resilience, which were facilitated by effective **debriefings**, which did not always happen. Coldridge and Davies (2017) interpret their findings from a psychoanalytic perspective, arguing that students should feel 'emotionally' contained' by their mentors and colleagues in order to manage and contain mothers' emotions when 'being with' and responding to them. Their work, like that of Hunter (2005), suggests that midwifery practice

inevitably takes an emotional toll, but that this can be both contained and mitigated against through how relationships are managed. Hunter's (2005) ethnographic study included qualified as well as student midwives, however, the experiences of students are highlighted in the included paper. As a precursor to Coldridge and Davies, Hunter defines midwifery as emotion work whereby student midwives have to become skilled at 'sussing out' and navigating the unwritten rules of engagement between them and senior midwives. Student midwives reported overt and covert aggression from their seniors, causing distress. They valued peer support, the opportunity to meet with peers to discuss and critique what they had observed and participated in, sharing 'atrocity stories'.

For Hunter, in 2005, hospital-based midwifery in the UK was characterised by intimidation and bullying. Ten years later, Davies and Coldridge's participants' self-diagnosed **experiences** of trauma resulted more frequently from relationships with seniors than from the experience of poor clinical outcomes. McKenna and Boyle (2016) also refer to a bullying midwifery culture as the context for their study of 'exposure to workplace violence' in Australian students. They adapted a cross sectional survey previously used with paramedics for use with student midwives. Of their 52 participants, 30% had experienced intimidation, mostly from midwives. 17% had experienced verbal abuse. Smaller numbers reported physical abuse and sexual harassment. Whilst some participants reported no impact of these experiences, some reported lower confidence and increased apprehension. Sidebotham et al (2015) applied a 'Five Senses of Success Framework' (Lizzio, 2011) to the midwifery student experience. According to the framework, students require senses of capability, purpose, identity, resourcefulness and connectedness in order to progress on their educational programme. Their participants described how the course could be stressful at times, leading to feelings of anxiety. As in other studies, a hostile and bullying clinical environment was referred to in their accounts. Such experiences particularly affected their 'sense of capability', meaning their self efficacy and confidence. **Both McKenna and Boyle (2016) and Sidebotham et al (2015) argue that midwifery students' wellbeing can be enhanced through their having a 'sense of belonging' in their clinical setting.**

Chamberlain et al (1997) undertook an ethnographic study to determine what factors affected students' clinical learning. These were conceptualised in terms of stress and anxiety. Anxiety provoking situations included when they felt poorly supervised in practice. Students reported 'inadequate' supervision and poor communication. Some of

Chamberlain's participants reported symptoms of stress and anxiety over six months after stressful events, suggesting they had a lasting effect on their progress. Reflection and **debriefing** were seen by Alghamadi and Jarrett (2016) as key to a manageable response to stress. This is in contrast to the qualified midwives' attitudes to 'reflection' reported by Bradshaw et al (2018) where reflective time was 'dismissed'. In her mixed methods study centred on resilience, through the use of a resilience scale, as well as focus groups and interviews, Williams (2016) found a range of degrees of resilience in participants. Students said that resilience meant being able to 'cope' or 'pick yourself up' and was something that developed over the midwifery programme from negative as well as positive experiences. Her participants saw 'reflection' as key to developing resilience, as was support from their mentors and university lecturers. This study only had five participants, but its findings reflect those of other studies in the review.

What interventions improve midwifery student wellbeing?

Three papers presented evaluations of interventions that related to midwifery student wellbeing. Bass et al (2016) evaluated 'student support circles', which were reflective groups for all first year students at two Australian colleges. The theoretical model informing this intervention was the 'Five Senses of Success Framework', also described by Sidebotham et al (2015), and one research question of the study was whether support circles contributed to resilience. The evaluation comprised a survey and a nominal group exercise, used to generate and prioritise ideas about how the student support circles helped to develop students' resilience. Student support circles were found 'extremely useful' by 30%. Their sense of resilience was promoted through feeling more connectedness and belonging to a group with a shared identity and sense of purpose. Bass et al (2016) locate their findings in the context of Hunter and Warren's (2013) work on resilience and professional identity, arguing that being able to reflect on practice and feel connected to peers is essential for 'survival' as a midwife. With similar aims, Cummins et al (2018) present a mixed methods evaluation of two workshops for 53 student midwives aiming to enable them to cope with 'sensitive topics' and develop their self-care skills. Pre/post surveys were used. One qualitative question in the post survey asked participants how they would incorporate the learning in their own lives. Participants said the workshops had helped them to feel more confident and more aware of how to self-care, including being able to manage stress or use meditation. The third paper (Sahebazamani et al, 2013) reported on the effect of five sessions of neurolinguistic programming on the mental health of 52 nursing and midwifery students, as measured by the GHQ28 (Goldberg et al,

1988). They found a significant decrease in midwifery students' symptoms of mental ill health, including for both the depression and anxiety sub-scales of the GHQ.

Discussion

Overall, this disparate group of studies paint a consistent picture of the 'causes and consequences of mental distress' in midwifery students. The clinical learning environment is described as one where interpersonal conflict, bullying and intimidation may take place, which for some students leads to symptoms of stress and anxiety. Student midwives experience anxiety about particular challenging events, such as neonatal death, but also about their competence at a range of midwifery tasks. There is a fear of reprisal if mistakes are made. Reflection and relationships with peers and mentors are posited as means by which trauma, stress and anxiety may be alleviated, and potentially used as stimulus for enhanced resilience and growth. What can be also surmised is that some mental distress may be an inevitable part of midwifery education, given the intense situations that students find themselves in. The studies reported here have drawn on a range of theories or, in the ethnographic studies, have developed theories grounded in their own analysis. Sample sizes have been small, and drawn as convenience from single sites. While the findings do present a consistent picture, there is a lack of data comparing midwifery students' mental wellbeing prior to and following the course, and there has been insufficient investigations regarding whether hospital and clinical cultures are replicated between sites, or within and between settings.

Our review findings on midwifery student wellbeing accord with those of McCarthy et al (2018) and Pezaro et al (2016, 2017), however there is value in addressing midwifery students as a distinct group, given the uniqueness of the scenarios faced by midwifery students. This review shows that there are definite gaps in the understanding of midwifery students' mental health and wellbeing. There is a lack of intervention research, a lack of longitudinal research and lack of multisite studies and no international comparator studies. Research on midwifery student wellbeing has not been located in the broader fields of research on health workers mental health and wellbeing, for example on stress, trauma and resilience. We do not know the extent to which students come to their courses with preexisting conditions such as depression and anxiety and we do not know how mental health evolves over the course of their programmes.

This review has limitations. It only includes English language studies, inhibiting its international reach. There has been insufficient commonality in the measures used and research questions asked for findings to warrant meta analysis or meta synthesis. We have, however presented a comprehensive and integrative account of the evidence on mental health and wellbeing of midwifery students and can make recommendations for future research. Future studies should include participants from more than one site and should have a longitudinal element. Midwifery academics should collaborate nationally and internationally to test the extent to which findings of disparate studies are reflective of the experiences of their own students. There would be value in repeating previous qualitative studies with students from several institutions, for example, Hunter's (2005) 'emotion work' and Coldridge and Davies' (2017) 'trauma' studies. Future cross-sectional studies should use validated measures of mental health and wellbeing that have been used in previous studies in order that results may be meaningfully compared or aggregated.

Conclusions

The findings of the studies reviewed here can be combined into a coherent narrative that midwifery **preregistration education** involves stressful and traumatic situations, which can be stimuli for the professional growth and confidence if support is available from midwives and peers. How educators and clinical practitioners treat midwifery students is a major source of anxiety, as is 'fear' of making errors and the consequences of doing so. More work is required to determine whether midwifery students' mental health fluctuates over the course of their studies and whether they have a similar prevalence of symptoms of mental illness to fellow **preregistration health professional students**. Due to a lack of empirical studies for this specific population, interventions to improve midwifery student wellbeing should take account of the complex interplay of factors that affect student mental health and will have to draw on work undertaken with student and healthcare professionals in other fields.

4913 words

4992 words including abstract

1. Figure 1: Prisma flow diagram
2. Table 1: study overviews and characteristics

References

Ahmadi, G., Shahriari, M., Kohan, S., & Keyvanara, M. (2017). Fear, an unpleasant experience among undergraduate midwifery students: A qualitative study. *Nurse Education in Practice*, 29(November), 110–115. <http://doi.org/10.1016/j.nepr.2017.12.004>

Alghamdi, R., & Jarrett, P. (2016). Experiences of student midwives in the care of women with perinatal loss: A qualitative descriptive study. *British Journal of Midwifery*, 24(10), 715–722. <http://doi.org/10.12968/bjom.2016.24.10.715>

Bass, J., Walters, C., Toohill, J., & Sidebotham, M. (2016). Promoting retention, enabling success : Discovering the potential of student support circles. *Nurse Education in Practice*, 20, 109–116. <http://doi.org/10.1016/j.nepr.2016.07.002>

Beaumont, E., Durkin, M., Martin, C. J. H., & Carson, J. (2016). Compassion for others, self-compassion, quality of life and mental well-being measures and their association with compassion fatigue and burnout in student midwives: A quantitative survey. *Midwifery*, 34, 239–244. <http://doi.org/10.1016/j.midw.2015.11.002>

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of general psychiatry*, 4(6), 561-571.

Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: psychometric properties. *Journal of consulting and clinical psychology*, 56(6), 893.

Bernstein, D. P., Fink, L., Handelsman, L., Foote, J., Lovejoy, M., Wenzel, K. & Ruggiero, J. (1994). Initial reliability and validity of a new retrospective measure of child abuse and neglect. *The American journal of psychiatry*, 151(8), 1132.

Black C. (2012) Why healthcare organisations must look after their staff. *Nursing Management*;19(6):27–30.

Bradshaw, C., Tighe, S. M., & Doody, O. (2018). Midwifery students' experiences of their clinical internship : A qualitative descriptive study. *Nurse Education Today*, 68(June), 213–217. <http://doi.org/10.1016/j.nedt.2018.06.019>

Cavanagh, S. J., & Snape, J. (1997a). Educational sources of stress in midwifery students. *Nurse Education Today*, 17(September 1995), 128–134.

Cavanagh, S. J., & Snape, J. (1997b). Stress in student midwives: an occupational perspective. *British Journal of Midwifery*, 5(9), 528–533.

Chamberlain, M. (1997). Challenges of clinical learning for student midwives. *Midwifery*, 13(February), 85–91.

Cilingir, D., Gursay, A. A., Hintistan, S., & Ozturk, H. (2011). Nursing and midwifery college students' expectations of their educators and perceived stressors during their education: A pilot study in Turkey. *International Journal of Nursing Practice*, 17, 486–494.

<http://doi.org/10.1111/j.1440-172X.2011.01965.x>

Coldridge, L., & Davies, S. (2017). “ Am I too emotional for this job ?” An exploration of student midwives' experiences of coping with traumatic events in the labour ward. *Midwifery*, 45(November 2016), 1–6. <http://doi.org/10.1016/j.midw.2016.11.008>

Cummins, A. M., Wight, R., Watts, N., & Catling, C. (2018). Introducing sensitive issues and self-care strategies to first year midwifery students. *Midwifery*, 61(January), 8–14. <http://doi.org/10.1016/j.midw.2018.02.007>

Davies, R. M., & Atkinson, P. (1991). Students of midwifery: "Doing the obs " and other coping strategies. *Midwifery*, 7, 113–121.

Davies, S., & Coldridge, L. (2015). ‘ No Man ’ s Land ’ : An exploration of the traumatic experiences of student midwives in practice. *Midwifery*, 31(9), 858–864. <http://doi.org/10.1016/j.midw.2015.05.001>

Deasy, C., Coughlan, B., Pironom, J., Jourdan, D., & Mcnamara, P. M. (2015). Psychological distress and lifestyle of students: Implications for health promotion. *Health Promotion International*, 30(1), 77–87. <http://doi.org/10.1093/heapro/dau086>

Deasy, C., Coughlan, B., Pironom, J., Jourdan, D., & Mannix-mcnamara, P. (2016). Predictors of health of pre-registration nursing and midwifery students: Findings from a

cross-sectional survey. *Nurse Education Today*, 36, 427–433.

<http://doi.org/10.1016/j.nedt.2015.09.010>

Delgado, C., Upton, D., Ranse, K., Furness, T., & Foster, K. (2017). Nurses' resilience and the emotional labour of nursing work: An integrative review of empirical literature.

International Journal of Nursing Studies, 70, 71–88.

<http://doi.org/10.1016/j.ijnurstu.2017.02.008>

Ferrand, C., Courtois, R., Martinent, G., Rivière, M., Ferrand, C., Courtois, R., ... Rivière, M. (2017). Relationships between work-related characteristics, needs satisfaction, motivation and mental health in midwifery students. *Psychology, Health & Medicine*, 22(6), 711–718. <http://doi.org/10.1080/13548506.2016.1220597>

Galvin, J., Suominen, E., Morgan, C., O'Connell, E., Smith, A., 2015. Mental health nursing students' experiences of stress during training: a thematic analysis of qualitative interviews. *J. Psychiatr. Ment. Health Nurs.* 22 (10), 773–783.

Goldberg, D. (1981) GHQ-28. GL Assessment Limited, London

Goldberg, D., Williams, P., 1988. *A User's Guide to the General Health Questionnaire*. NFER-Nelson, Windsor

Graham, M., Lindo, J., Bryan, E., Steve Weaver, S., 2016. Factors associated with stress among second year student nurses during clinical training in Jamaica. *J. Prof. Nurs.* 32 (5), 383–391

Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, Gagnon M-P, Griffiths F, Nicolau B, O'Cathain A, Rousseau M-C, Vedel I. (2018) *Mixed Methods Appraisal Tool (MMAT)*, version 2018. Registration of Copyright (#1148552), Canadian Intellectual Property Office, Industry Canada.

Hunter, B. (2005). Emotion work and boundary maintenance in hospital-based midwifery. *Midwifery*, 21(3), 253–266. <http://doi.org/10.1016/j.midw.2004.12.007>

Hunter, B., Henley, J., Fenwick, J., Sidebotham, M., Pallant, J. (2017) Work, Health and Emotional Lives of Midwives in the United Kingdom: The UK WHELM study. London: Royal College of Midwives.

Hunter, B. & Warren, L. (2013) Investigating Resilience in Midwifery. Cardiff: Cardiff University

İnanç, B. B. (2017). Correlation of the frequency of childhood trauma with depression and anxiety in midwifery students. *Journal of Clinical and Analytical Medicine*, 8(4), 288–292. <http://doi.org/10.4328/JCAM.4882>

Junious, D., Malecha, A., Tart, K., Young, A., 2010. Stress and perceived faculty support among foreign-born baccalaureate nursing students. *J. Nurs. Educ.* 49 (5), 261–270.

Karasek, R.A., Theorell, T., 1990. *Healthy work: stress, productivity and the reconstruction of working life*. Basic Books, New York.

Kenworthy D, Kirkham M. (2011) *Midwives coping with loss and grief: stillbirth, professional, and personal losses*. Oxford: Radcliffe Publishing

Khajehei, M., Ziyadious, S., Hadzic, M., & Kashefi, F. (2004). The genesis and consequences of stress among midwifery students. *British Journal of Midwifery*, 19(6), 379–385.

Larijani, T. T., Aghajani, M. ., Baheiraei, A., & Neiestanak, N. S. (2010). Relation of assertiveness and anxiety among Iranian University students. *Journal of Psychiatric and Mental Health Nursing*, 17, 893–899. <http://doi.org/10.1111/j.1365-2850.2010.01607.x>

Leinweber, J., & Rowe, H. J. (2010). The costs of 'being with the woman': Secondary traumatic stress in midwifery. *Midwifery*, 26, 76–87.

Leplege, A., Reveillere, C., Ecosse, E., Caria, A., & Riviere, H. (2000). Propriétés psychométriques d'un nouvel instrument d'évaluation de la qualité de vie, le WHOQOL 26 [Psychometric properties of a new instrument for assessing quality of life, the WHOQOL-26]. *L'Encéphale*, 26, 13–22.

Lesage, F. X., Martens-Resende, S., Deschamps, F., & Berjot, S. (2011). Validation of the general health questionnaire (GHQ-12) adapted to a work-related context. *Open Journal of Preventive Medicine*, 1, 44–48

Lizzio, A. (2011). *Succeeding@ Griffith: Next generation partnerships across the student lifecycle*. Griffith University Student Lifecycle, Transition and Orientation. Queensland: Griffith University

McCarthy, B., Trace, A., Donovan, M. O., Brady-nevin, C., Murphy, M., Shea, M. O., & Regan, P. O. (2018). Nurse Education Today Nursing and midwifery students' stress and coping during their undergraduate education programmes : An integrative review. *Nurse Education Today*, 61(November), 197–209. <http://doi.org/10.1016/j.nedt.2017.11.029>

McDonald, G., Jackson, D., Wilkes, L., Vickers, M.H., 2013. Personal resilience in nurses and midwives: effects of a work-based educational intervention. *Contemporary Nurse: A Journal for the Australian Nursing Profession* 45, 134–143.

McDonald, G., Jackson, D., Wilkes, L., Vickers, M.H., 2012. A work-based educational intervention to support the development of personal resilience in nurses and midwives. *Nurse Education Today* 32, 378–384.

McKenna, L., & Boyle, M. (2016). Midwifery student exposure to workplace violence in clinical settings: An exploratory study. *Nurse Education in Practice*, 17, 123–127. <http://doi.org/10.1016/j.nepr.2015.11.004>

McKenna, L., & Rolls, C. (2011). Undergraduate midwifery students' first experiences with stillbirth and neonatal death. *Contemporary Nurse*, 38(1–2), 76–83. <http://doi.org/10.5172/conu.2011.38.1-2.76>

Mivsek, P., Äimälä, A., Žvanut, B., & Tuomi, J. (2018). Midwifery students' well-being among undergraduates in Slovenia : A pilot study. *Midwifery*, 61(November 2017), 63–65. <http://doi.org/10.1016/j.midw.2018.02.020>

Pezaro, S., Clyne, W., Turner, A., Fulton, E. A., & Gerada, C. (2016). "Midwives Overboard!" Inside their hearts are breaking, their makeup may be flaking but their smile still stays on. *Women and Birth*, 29(3), e59–e66.

<http://doi.org/10.1016/j.wombi.2015.10.006>

Pezaro, S., Hons, B. A., Clyne, W., & Fulton, E. A. (2017). A systematic mixed-methods review of interventions, outcomes and experiences for midwives and student midwives in work-related psychological distress. *Midwifery*, 50(August 2016), 163–173.

<http://doi.org/10.1016/j.midw.2017.04.003>

Pluye, P., Robert, E., Cargo, M., Bartlett, G., O’Cathain, A., Griffiths, F., Boardman, F., Gagnon, M.P., & Rousseau, M.C. (2011). Proposal: A mixed methods appraisal tool for systematic mixed studies reviews. Department of Family Medicine, McGill University, Montreal, Canada. Retrieved on 2 Nov 2018 from

<http://mixedmethodsappraisaltoolpublic.pbworks.com>. Archived by WebCite® at

<http://www.webcitation.org/5tTRTc9yJ>

Prymachuk, S., & Richards, D. A. (2008). Predicting stress in pre-registration midwifery students attending a university in Northern England. *Midwifery*, 24, 108–122.

<http://doi.org/10.1016/j.midw.2006.07.006>

Royal College of Midwives (2017) Stress affects almost 50% of England's midwives.

<https://www.rcm.org.uk/news-views-and-analysis/news/stress-affects-almost-50-of-englands-midwives> [accessed 31 October 2018]

Rawson, S. (2011). A qualitative study exploring student midwives' experiences of carrying a caseload as part of their midwifery education in England. *Midwifery*, 27(6), 786–792. <http://doi.org/10.1016/j.midw.2010.07.004>

Sahebalzamani, M. (2014). Efficacy of neurolinguistic programming training on mental health in nursing and midwifery students. *Iranian journal of nursing and midwifery research*, 19(5), 503.

Sheen, K., Slade, P., Spiby, H., 2014. An integrative review of the impact of indirect trauma exposure in health professionals and potential issues of salience for midwives. *Journal of Advanced Nursing* 70, 729–743

Sidebotham, M., Fenwick, J., Carter, A., & Gamble, J. (2015). Using the five senses of success framework to understand the experiences of midwifery students enrolled in an undergraduate degree program. *Midwifery*, 31(1), 201–207.
<http://doi.org/10.1016/j.midw.2014.08.007>

Sizmur, S. & Raleigh, V. (2018) The risks to care quality and staff wellbeing of an NHS system under pressure. London: Picker/ King's Fund

Stamm, B.H., 2009. Professional Quality of Life: Compassion Satisfaction and Fatigue Version 5 (ProQOL)./(<www.isu.edu/?bhstamm or www.proqol.org).

Tennant, R., Hiller, L., Fishwick, R., et al., 2009. The Warwick and Edinburgh Mental Well-Being Scale (WEMWBS): development and UK validation. *Health Qual. Life Outcomes* 5, 1–13.

Thorley, C. (2017). Not By Degrees: Improving Student Mental Health in the UK's Universities, (September), 75. <http://doi.org/http://www.ippr.org/research/publications/not-by-degrees>

Tuomi, J., Aimala, A.-M., Zvanut, B., 2016. Nursing students' well-being using the job-demand-control model: a longitudinal research. *Nurse Education Today* 45, 193–198.

van der Riet., Rossiter, R., Kirby, D., Dluzewska, T., Harmon, C.,(2015). Piloting a stress management and mindfulness program for undergraduate nursing students: student feedback and lessons learned. *Nurse Education Today* 35, 44–49.

Wallbank, S., (2010). Effectiveness of individual clinical supervision for midwives and doctors in stress reduction: findings from a pilot study. *Evidence Based Midwifery* 8, .70–65

Warriner, S., Hunter, L., Dymond, M., 2016. Mindfulness in maternity: evaluation of a course for midwives. *British Journal of Midwifery* 24, 188–195.

Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing*, 52(5), 546–553. <http://doi.org/10.1111/j.1365-2648.2005.03621.x>

Williams, J. (2016). Navigating the midwifery undergraduate programme: Is resilience the key ? *British Journal of Midwifery*, 24(11), 790–798.

Yearley, C. (1999). Pre-registration student midwives: 'Fitting In. *British Journal of Midwifery*, 7(10), 627–631.